REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-8 are pending in the present Application. Claims 1-2 and 6-8 are amended by the present amendment. Support for the amended claims can be found in the original specification, claims and drawings.[1] No new matter has been added.

In the Office Action, Claims 1-8 are rejected under 35 U.S.C. § 103(a) as unpatentable over Coulson et al. ("A Statistical Basis for Lognormal Shadowing Effects in Multipath Fading Channels", herein Coulson) in view of Zhao ("Multipath Propagation Characterization for Terrestrial Mobile and Fixed Microwave Communications", herein Zhao) and Cavalcante et al. ("Mobile Radio Propagation Along Mixed Paths in Forest Environment", herein Cavalcante).

In response to the above noted rejection, Applicants respectfully submit that amended independent Claims 1-2 and 6-8 recite novel features clearly not taught or rendered obvious by the applied references.

Amended independent Claim 1, for example, recites, in part Claim 1 recites, a time-varying multi-path generating apparatus for simulating multi-path fluctuations in radio communications, wherein

> when generating the time varying propagation paths, if a shadowing object is present in the line of sight, a received electric field strength E is given as the summation of E1 that is an electric field strength of a first radio propagation path diffracted by a knife-edge at one edge of said shadowing object and E2 that is an electric field strength of a second radio propagation path that is different from the first propagation path and diffracted by a knife-edge at another opposite edge of said shadowing object,
>
> said first radio propagation path starts at the transmission point, does not pass the another edge of said shadowing object, and is diffracted at the one edge of said shadowing object before reaching the receiving point,

[1] E.g., specification, at least at Fig. 12 and pp. 30-33.

said second radio propagation path starts at the transmission point, does not pass the one edge of said shadowing object, and is diffracted at the another edge of said shadowing object before reaching the receiving point, and

said shadowing object is between the first and second radio propagation paths.

As disclosed in an exemplary embodiment at Fig. 12, the first radio propagation path (E_1) starts at the transmitting point (0, 0) does not pass the another edge (e.g., x2, y2) of the shadowing object, and is diffracted at the one edge (e.g., x1, y1) of the shadowing object before reaching the receiving point (L, 0). The second radio propagation path (E_2) starts at the transmission point (0, 0), does not pass the one edge (e.g., x1, y1) of said shadowing object, and is diffracted at the another edge (e.g., x2, y2) of said shadowing object before reaching the receiving point (L, 0).

At p. 5, the Office Action concedes that Coulson and Zhao fail to disclose "and diffracted by a knife edge at another opposite edge of said shadowing object which is located between the first and second radio propagation paths". In an attempt to remedy this deficiency, the Office Action relies on Cavalcante and asserts that it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the cited references to arrive at Applicants' claims. Applicants respectfully submit, however, that Cavalcante fails to disclose the claimed configuration directed to the relationships between the first and second propagation paths, the transmission point, the receiving point, and the shadowing object, as recited in the amended independent claims.

In rejecting independent Claim 1, the Office Action relies on Fig. 1(b) of Cavalcante, specifically noting field components E_{R1}, E_{R2}, E_1 and E_2. As described at p. 43 of Cavalcante, points "A" and "B" correspond to first and second discontinuities of a forest. At the first discontinuity point A, field component E_{R1} corresponds to diffraction based on a discontinuity of the forest, while field component E_{R2} corresponds to diffraction of the

propagation path from this same discontinuity of the forest as reflected from the road. Thus, field components E_{R1} and E_{R2} result from the diffraction of the propagation path from the same point corresponding to a discontinuity of the forest. Similarly, E_1 and E_2 correspond to diffraction in the propagation path from the discontinuity of the forest at point B, with E_1 being the path directly from the diffraction to the receiver and E_2 being the path from the diffraction as reflected from another forest on the opposite side of the road.

Therefore, field components E_{R1} and E_{R2} in Fig. 1(b) of Cavalcante each correspond to components generated from diffraction of the propagation path from a same first point (A) of a discontinuity of a first forest, while field components E_1 and E_2 similarly correspond to components generated from the diffraction of the propagation path from a same second point (B) of a discontinuity of a second forest. Thus, no two propagation paths correspond to field components that are created based on a diffraction at front edge and back edge of the same shadowing object, as claimed.

More particularly, Cavalcante fails to teach or suggest using "said first radio propagation path [that] starts at the transmission point, ***does not pass the another edge of said shadowing object, and is diffracted at the one edge of said shadowing object before reaching the receiving point***" and "said second radio propagation path [that] starts at the transmission point, ***does not pass the one edge of said shadowing object, and is diffracted at the another edge of said shadowing object before reaching the receiving point***" to determine a received electric field strength, as recited in amended independent Claims 1-2 and 6-8. Further, as noted above, the Office Action concedes that Coulson and Zhao fail to disclose "and diffracted by a knife edge at another opposite edge of said shadowing object which is located between the first and second radio propagation paths".

Accordingly, Applicants respectfully request the rejection of Claims 1-8 under 35 U.S.C. § 103 be withdrawn.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 1-8 is patentably distinguishing over the applied references. The present application is therefore believed to be in condition for allowance and an early and favorable reconsideration of the application is therefore requested.

Respectfully submitted,

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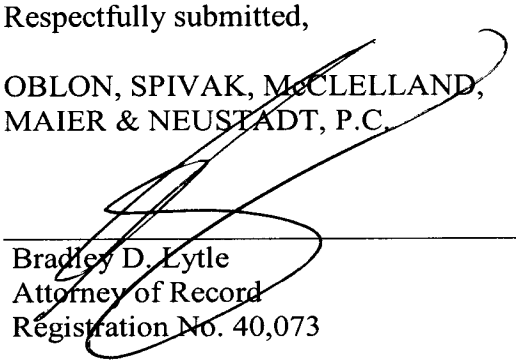

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